

CLEAN VERSION OF AMENDMENTS

Cancel claims 6-9, 14 and 22.

Amend claims 1-5, 10-13 and 15-21; and add new claims 23-25 as follows:

1. (amended) A hard capsule comprising

- (A) polymers produced by free-radical polymerization of
- a) at least one vinyl ester of C₁-C₂₄-carboxylic acids in the presence of
 - b) polyether-containing compounds and
 - c) at least one other copolymerizable monomer c) selected from the group consisting of tert-butyl acrylate, methyl methacrylate, ethyl methacrylate, isobutyl acrylate, tert-butyl methacrylate, styrene, vinyl chloride, acrylic acid, methacrylic acid, acrylamide and methacrylamide and subsequent at least partial hydrolysis of the ester functions in the original monomers a),
- (B) optionally, structure-improving auxiliaries and
- (C) optionally other constituents selected from the group consisting of fillers, release agents, flow aids, stabilizers, water-soluble or water-insoluble dyes, flavorings and sweeteners.

2. (amended) A hard capsule as claimed in claim 1, wherein the polymers (A) are obtained by free-radical polymerization of

- a) at least one vinyl ester of C₁-C₂₄-carboxylic acids in the presence of
 - b) polyether-containing compounds of the general formula I
- $$R^1-(O-(R^2-O)_u-(R^3-O)_v-(R^4-O)_w-[A-(R^2-O)_x-(R^3-O)_y-(R^4-O)_z]_gR^5)_n$$

in which the variables have, independently of one another, the following meaning:

R¹ hydrogen, C₁-C₂₄-alkyl, R⁶-C(=O)-, R⁶-NH-C(=O)-, polyalcohol residue;

R⁵ hydrogen, C₁-C₂₄-alkyl, R⁶-C(=O)-, R⁶-NH-C(=O)-;

R² to R⁴ -(CH₂)₂-, -(CH₂)₃-, -(CH₂)₄-, -CH₂-CH(R⁶)-,
-CH₂-CHOR⁷-CH₂-;

R⁶ C₁-C₂₄-alkyl;

R⁷ hydrogen, C₁-C₂₄-alkyl, R⁶-C(=O)-, R⁶-NH-C(=O)-;

A -C(=O)-O, -C(=O)-B-C(=O)-O,
-C(=O)-NH-B-NH-C(=O)-O;

B -(CH₂)_t-, arylene, optionally substituted;

n 1 to 1000;

s 0 to 1000;

t 1 to 12;

u 1 to 5000;

v 0 to 5000;

w 0 to 5000;

x 0 to 5000;

y 0 to 5000;

z 0 to 5000;

B
cont.

and

- c) at least one other copolymerizable monomer selected from the group consisting of tert-butyl acrylate, methyl methacrylate, ethyl methacrylate, isobutyl acrylate, tert-butyl methacrylate, styrene, vinyl chloride, acrylic acid, methacrylic acid, acrylamide and methacrylamide,

B1
cont.
and subsequent at least partial hydrolysis of the ester functions in the original monomers a).

3. (amended) A hard capsule as claimed in claim 1, wherein the polymers (A) are obtained by free-radical polymerization of

- a) at least one vinyl ester of C₁-C₂₄-carboxylic acids in the presence of
b) polyether-containing compounds of the general formula I with a number average molecular weight of from 300 to 100,000, in which the variables have, independently of one another, the following meaning:

B2
 R^1 hydrogen, C₁-C₁₂-alkyl, R⁶-C(=O)-, R⁶-NH-C(=O)-, polyalcohol residue;

R^5 hydrogen, C₁-C₁₂-alkyl, R⁶-C(=O)-, R⁶-NH-C(=O)-;

R^2 to R^4 -(CH₂)₂-, -(CH₂)₃-, -(CH₂)₄-, -CH₂-CH(R⁶)-,
-CH₂-CHOR⁷-CH₂-;

R^6 C₁-C₁₂-alkyl;

R^7 hydrogen, C₁-C₁₂-alkyl, R⁶-C(=O)-, R⁶-NH-C(=O)-;

n 1 to 8;

s 0;
u 2 to 2000;
v 0 to 2000;
w 0 to 2000;

and

- c) at least one or more other copolymerizable monomers selected from the group consisting of tert-butyl acrylate, methyl methacrylate, ethyl methacrylate, isobutyl acrylate, tert-butyl methacrylate, styrene, vinyl chloride, acrylic acid, methacrylic acid, acrylamide and methacrylamide,

and subsequent at least partial hydrolysis of the ester functions in the original monomers a).

4. (amended) A hard capsule as claimed in claim 1, wherein the polymers (A) are obtained by free-radical polymerization of

- a) at least one vinyl ester of C₁-C₂₄-carboxylic acids in the presence of
b) polyether-containing compounds of the general formula I with a number average molecular weight of from 500 to 50,000, in which the variables have, independently of one another, the following meaning:

R¹ hydrogen, C₁-C₆-alkyl, R⁶-C(=O)-, R⁶-NH-C(=O)-;

R⁵ hydrogen, C₁-C₆-alkyl, R⁶-C(=O)-, R⁶-NH-C(=O)-;

R² to R⁴ -(CH₂)₂-, -(CH₂)₃-, -(CH₂)₄-, -CH₂-CH(R⁶)-,

-CH₂-CHOR⁷-CH₂-;

R⁶ C₁-C₆-alkyl;

R⁷ hydrogen, C₁-C₆-alkyl, R⁶-C(=O)-, R⁶-NH-C(=O)-;

n 1;

s 0;

u 5 to 1000;

v 0 to 1000;

w 0 to 1000;

and

- c) one or more other copolymerizable monomers selected from the group consisting of tert-butyl acrylate, methyl methacrylate, ethyl methacrylate, isobutyl acrylate, tert-butyl methacrylate, styrene, vinyl chloride, acrylic acid, methacrylic acid, acrylamide and methacrylamide,

and subsequent at least partial hydrolysis of the ester functions in the original monomers a).

5. (amended) A hard capsule as claimed in claim 1, wherein the polymers (A) are obtained by free-radical polymerization of

- a) at least one vinyl ester of C₁-C₂₄-carboxylic acids in the presence of
- b) polyether-containing compounds and
- c) at least one other copolymerizable monomer selected from the group consisting of tert-butyl acrylate, methyl methacrylate, ethyl methacrylate, isobutyl acrylate, tert-butyl methacrylate, styrene, vinyl chloride, acrylic

acid, methacrylic acid, acrylamide and methacrylamide,

B² cont.
and subsequent at least partial hydrolysis of the ester functions in the original monomers a), wherein the polyether-containing compounds b) have been prepared by polymerization of ethylenically unsaturated alkylene oxide-containing monomers, alone or together with, other copolymerizable monomers.

B³
10. (amended) A hard capsule as claimed in claim 1, wherein the resulting polymers are subsequently crosslinked.

11. (amended) A hard capsule as claimed in claim 10, wherein the resulting polymers are subsequently crosslinked by reaction with one or more compounds selected from the group consisting of dialdehydes, diketones, dicarboxylic acids, boric acid, boric acid salts, and salts of multiply charged cations.

12. (amended) A hard capsule as claimed in claim 1, wherein the structure-improving auxiliaries (B) employed are selected from the following classes of compounds:

- a) polymers with a molecular weight greater than 50,000
- b) substances which lead to crosslinking of the polymer chains of the polymers,
- c) and substances which lead to crosslinking of the polymer chains of the structure-improving auxiliaries.

13. (amended) A hard capsule as claimed in claim 1, wherein the structure-improving auxiliaries employed are polymers selected from the group consisting of: polyamino acids, polysaccharides and synthetic polymers.

R4
15. (amended) A hard capsule as claimed in claim 1, wherein the capsule consists of 10 to 100% polymers of vinyl esters on polyether, 0 to 80% structure-improving auxiliaries and 0 to 30% said other constituents.

16. (amended) A hard capsule according to claim 1, obtained by the dip process.

17. (amended) A hard capsule as claimed in claim 1 which has been packed with ingredients selected from the group consisting of one or more active pharmaceutical ingredients, vitamins, carotenoids, minerals, trace elements, food supplements, cosmetic active ingredients, crop protection agents, bath additives, perfume, flavoring, cleaner and detergent.

18. (amended) A hard capsule as claimed in claim 1 which capsule comprises from 20 to 80% of a polymer resistant to gastric fluid.

19. (amended) A hard capsule as claimed in claim 18, wherein said polymer resistant to gastric fluid is applied as a coating using pharmaceutical coating processes.

20. (amended) The hard capsule as claimed in claim 17 which contains one or more pharmaceutical ingredients.

21. (amended) The hard capsule as claimed in claim 17 which contains one or more ingredients selected from the group consisting of cosmetics, crop protection agents, cleaning agents and food supplements.

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R5
23. (new) A soft capsule as claimed in claim 13, wherein said polyamino acids are selected from the group consisting of gelatin, zein, soybean protein and derivatives thereof.

24. (new) A soft capsule as claimed in claim 13, wherein said polysaccharides are selected from the group consisting of starch, degraded starch, maltodextrins, carboxymethylstarch, cellulose, hydroxypropylmethylcellulose, hydroxypropylcellulose, hydroxyethylcellulose, methylcellulose, carboxymethylcellulose, ethylcellulose, cellulose acetate, cellulose acetate phthalate, hydroxypropylcellulose acetate phthalate, hydroxypropylcellulose acetate succinate, hemicellulose, galactomannans, pectins, alginates, carrageenans, xanthan, gellan, dextran, curdlan, pullulan, gum arabic, chitin, and derivatives thereof.
25. (new) A soft capsule as claimed in claim 13, where said synthetic polymers are selected from the group consisting of polyacrylic acid, polymethacrylic acid, copolymers of acrylic esters and methacrylic esters, polyvinyl alcohols, polyvinyl acetate, polyethylene glycols, polyoxyethylene/polyoxypropylene block copolymers, polyvinylpyrrolidones and derivatives thereof.